UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,145	10/14/2003	Tatsuaki Ishida	10873.697USC1	6216

7590 10/17/2005

Hamre, Schumann, Mueller & Larson, P.C.
P.O. Box 2902-0902
Minneapolis, MN 55402-0903

EXAMINER
RODRIGUEZ, GLENDA P

ART UNIT	PAPER NUMBER
2651	

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/686,145	**Applicant(s)** ISHIDA ET AL.	
	Examiner Glenda P. Rodriguez	**Art Unit** 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 September 2005*.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-22* is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *14-22* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *14 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☒ All b)☐ Some * c)☐ None of:
1.☒ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)✓☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *10/14/2003*. 1-20-04
4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1. Examiner acknowledges the Preliminary Amendment filed on 9/13/2005.

2. Examiner further acknowledges that Claims 1-13 were cancelled and Claim 16 was amended.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 14, 15 and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishida et al. (US Patent No. 6, 347, 016).

Regarding Claim 22, Ishida et al. teaches a method for producing a vertical magnetic recording medium, the method comprising the step of:

> Bringing a surface of a master information carrier in close contact with a surface of the vertical magnetic recording medium (See Fig. 9(a), wherein a perpendicular medium is placed in close contact with the master), the surface of the master information having an information signal according to a figuration pattern of an array of ferromagnetic thin films that are deposited on a surface of a substrate, and applying a magnetic field thereto, so as to record the information signal corresponding to the array of the ferromagnetic thin films as magnetization information in the vertical magnetic recording medium (See Fig. 9(a), wherein it displays the magnetic field being applied to the medium and see also Col. 15, L. 6-20),

Wherein the ferromagnetic thin films are magnetized in a direction parallel to the surfaces thereof, by applying the magnetic field in the direction parallel to the surfaces of the ferromagnetic thin films and a surface of a magnetic layer of the vertical magnetic recording medium (See Abstract, wherein it teaches the medium containing a ferromagnetic thin film and Col. 15, L. 6-20), and

The magnetic layer of the vertical magnetic recording medium. is magnetized in a direction vertical to the surface thereof (See Fig. 9(a)), with use of a vertical directional component of a leakage magnetic flux that leaks out between adjacent ferromagnetic thin films (See Col. 4, L. 49-60, wherein Ishida et al. teaches that a leakage flux is generated through the protruding portion in the direction of magnetizing, therefore making the magnetic leakage flux tending in a vertical manner from the medium.).

Claim (14) has limitations similar to those treated in the above rejection, and is met by the references as discussed above.

Regarding Claim 15, Ishida et al. teaches all the limitations of Claim 14. Ishida et al. further teaches wherein comprising the step of: erasing magnetization of le vertical magnetic recording medium to a neutral point at least either by applying a magnetic field alternately in opposite directions or through application of a thermo-magnetization method, prior to the step of bringing the surface of the master information carrier in close contact to the surface of the vertical magnetic recording medium (See Col. 15, L. 21-28).

Regarding Claim 17, Ishida et al. teaches all the limitations of Claim 14. Ishida et al. further teach wherein the ferromagnetic thin films have either a thickness of not more than a bi, length of a digital information signal to be recorded in the vertical magnetic recording medium or a thickness of not more than a half of a shortest recording wavelength of an analog information signal to be recorded in the vertical magnetic recording medium (Col. 10, L. 34-54).

Regarding Claim 18, Ishida et al. teaches all the limitations of Claim 14. Ishida et al. further teach wherein the magnetic field is provided using a magnetic transcription bead arranged in a vicinity of a back face of the master information carrier, the method further comprising the step of; shifting the magnetic transcription head relative to the master information carrier while maintaining a constant distance between the magnetic transcription head and the back face of the master information carrier in a state in which the surface of the master information carrier and the surface of the vertical magnetic recording medium are in close contact with each other, so that the magnetic field is applied over a region that requires the magnetic fields and separating the magnetic transcription head at a predetermined position farther from the master information carrier, after the step of shifting the magnetic transcription head (See Figs. 17 (a) and (b) along with their explanation in Description of Drawings from Ishida et al.).

Regarding Claim 19, Ishida et al. teaches all the limitations of Claim 18. Ishida et al. further teaches a magnetic core (or head) having coil windings and shifting the magnetic transcription head relative to the master information carrier while maintaining a certain distance between the magnetic transcription head and the back face of the master information carrier, a coil current is supplied to the magnetic transcription head, and prior to the step of separating the magnetic transcription head farther from the master information carrier, the supply of the coil current is stopped (Figs. 17 (a) and (b) along with their explanation in Description of Drawings from Ishida et al. and also Col. 6, L. 40-52 and Col. 13, L. 15-26).

Regarding Claims 20 and 21, Ishida et al. teaches all the limitations of Claim 18. Ishida et al. further teach wherein the master information carrier has, on its surface an area where a figuration pattern of ferromagnetic thin films corresponding to information signal is formed, and an area where a figuration pattern of ferromagnetic thin films is not formed, and the step of separating the magnetic transcription head farther from the master information carrier is carried out by moving the magnetic transcription head in a direction vertical to the surface of the master information carrier, at a position where the magnetic transcription head is opposed to the area where a figuration pattern of the ferromagnetic thin films is not formed (Figs. 17 (a) and (b) along with their explanation in Description of Drawings from Ishida et al. and also Col. 6, L. 40-52 and Col. 13, L. 15-26).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. (US Patent No. 6, 347, 016) in view of Nagao et al. (US Patent No. 6, 433, 944). Ishida et al. teaches all the limitations of Claim 14. However, Ishida et al. does not explicitly teach wherein the magnetic field is a dc magnetic field. Nagao et al. teaches a dc magnetic field recorded in plane of the recording medium (Col. 6, L. 39-44 of Nagao et al.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Ishida et al.'s invention with the teaching of Nagao et al. in order to effectuate effective magnetic transfer.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Nagao et al. (US Patent No. 6, 433, 944 B1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GPR
gpr
September 20, 2005.

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600